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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/749,078	12/27/2000	Stuart Lloyd Geary	07 37549	3272

7590 09/23/2004

John P. McMahon
524 Redman Avenue
Haddonfield, NJ 08033

EXAMINER

JEANTY, ROMAIN

ART UNIT	PAPER NUMBER
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3623

DATE MAILED: 09/23/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

RECEIVED
OCT 19 2004
GROUP 3600

Office Action Summary

Application No.

09/749,078

Applicant(s)

GEARY, STUART LLOYD

Examiner

Romain Jeanty

Art Unit

3623

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 December 2000.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-19 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

1. This Non-Final Office Action is in response to the filing of this application on December 27, 2000. Claims 1-19 are pending on the application and are examined on the merits.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1, 3-5, 7, and 9-10 are rejected under 35 U.S.C. 102(b) as being anticipated by Alwang (Instant groupware. (seven 'teamware' packages (include related articles on the editors' choice, suitability to task, the best and worst features of the packages, the groupware components of Microsoft and Netscape Web browsers, chat software for business, and document management software).

As per claims 1, 3-5, and 9-10, Alwang discloses:

maintaining a record of information for determining the approach of task due dates for a plurality of client entities, maintaining hypermedia server means for receiving task performance instructions, at a plurality of times (i.e., server for storing task information) sending an electronic message to each client entity for which a task due date falls within a succeeding predetermined period, receiving an instruction to perform a task from a client entity by means of the hypermedia server means, wherein said electronic messages include means for causing a client entity to request a page from the hypermedia server means (i.e., server for storing task assignments/information and sending

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email messages to users/members in order to perform task assignments and HTWL to incorporate pages for navigation). Note page 5-11 of Alwang.

Claim 7 is an apparatus for administering a repetitive task of method claim 1; therefore is rejected under the same rationale.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 2, 6, 8, 11-19, are rejected under 35 U.S.C. 103(a) as being unpatentable over Alwang (Instant groupware. (seven 'teamware' packages (include related articles on the editors' choice, suitability to task, the best and worst features of the packages, the groupware components of Microsoft and Netscape Web browsers, chat software for business, and document management software)).

As per claims 2, 8, 12, and 17, Alwang does not explicitly disclose wherein the electronic messages do not identify the task due dates to which they relate. However, incorporating an electronic message not having a task due into the disclosure of Alwang would have been obvious to a person of ordinary skill in the art in order to prevent information about the due date of the task from being read by other users.

As per claims 6, 15, 19, Alwang discloses all of the limitations above, but fails to disclose wherein said task is payment of a renewal fee for an intellectual property right. However, it would have

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been obvious to a person of ordinary skill in the art to incorporate performing a task for payment of a renewal fee for an intellectual property with the motivation to authorize payment for a service, thereby avoiding paying late fee.

As per claims 11-14, 16, and 18, recites the same limitations of claim 1 above, except a page identifier and loading the page identifier into browser of the client computer. However, it is old and well known to incorporate a page identifier when displaying transmitting and displaying a page to a user's computer for proper indexing purposes. Therefore, it would have been obvious to a person of ordinary skill in the art to incorporate a page identifier into the disclosures of Alwang for allowing easy retrieval of the page.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

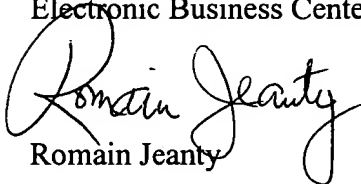
- a. Miller (U.S. Patent No. 6,101,481) discloses a task management system.
- b. Jalia (U.S. Patent No. 6,445,968) discloses a process for planning and scheduling a task.
- c. Olapurath et al (U.S. Patent No. 6,678,714) disclose a task management system for processing tasks.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Romain Jeanty whose telephone number is (703) 308-9585. The examiner can normally be reached on Mon-Thurs 7:30 am - 6:00 pm.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tariq R Hafiz can be reached on (703) 305-9643. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Romain Jeanty

Primary Examiner

Art Unit 3623

September 20, 2004

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

Substitute for form 1449A/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(use as many sheets as necessary)

Complete if Known

Application Number	09/749,078
Filing Date	12/27/00
First Named Inventor	Stuart L. Gentry
Group Art Unit	2161
Examiner Name	
Attorney Docket Number	07 37544

U.S. PATENT DOCUMENTS

[illegible]

FOREIGN PATENT DOCUMENTS

[illegible]

**Examiner
Signature**

Date Considered

***EXAMINER:** Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ Unique citation designation number. ² See attached Kinds of U.S. Patent Documents. ³ Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). ⁴ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁵ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. ⁶ Applicant is to place a check mark here if English language Translation is attached.

Burden Hour Statement: This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U. S. Patent and Trademark Office, Washington, DC 20231. **DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO:** Assistant Commissioner for Patents, Washington, DC 20231.

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Form PTO-1449 U.S. DEPARTMENT OF COMMERCE
PATENT AND TRADEMARK OFFICEINFORMATION DISCLOSURE
STATEMENT BY APPLICANT

(Use several sheets if necessary)

ATTY. DOCKET NO.

8004-11

SERIAL NO.

09/749.078



APPLICANT: Stuart Lloyd Geary

FILING DATE: December 27, 2000

GROUP

Art Unit 2161

3623

U.S. PATENT DOCUMENT

FOREIGN PATENT DOCUMENTS

		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	TRANSLATION	
							YES	NO

RECEIVED

MAY 30 2003

OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)

GROUP 3600

1. Paytrust: Press Release - June 29, 1999, "Paytrust.com Launches on the Web to Take the Chore Out of Monthly Bills", <http://www.paytrust.com/htmlu/pressrelease990629.htm>
2. Paytrust: Press Clippings. © 2001 PAYTRU \$T. Inc., <http://www.paytrust.com/htmlu/pressclippings.htm>
3. Bazdarich, CBS Market Watch, "Services pay your bills like a pro", Sept. 7, 1999, <http://www.paytrust.com/htmlu/press cbs.htm>
4. Davidson, USA Today, The Check is on the Net "Paying Bills on line starting slow, but convenience, cost cutting expected to boost participation", August 4, 1999, <http://www.paytrust.com/htmlu/press usatoday.htm>
5. Online Banking Report, The Exclusive Monthly Report on Home Banking and Interactive Financial Products & Markets, Number 54, November/December 1999, <http://www.paytrust.com/htmlu/press obr.htm>
6. Smith, The Philadelphia Inquirer, 1999, Philly Tech Magazine, "Paytrust: an online secretary", <http://www.paytrust.com/htmlu/press phillytech.htm>
7. PRWeb™, PCREMINDER.COM TAKES ONLINE REMINDERS TO NEW LEVEL WITH EMAIL POSTCARD REMINDERS, December 16, 1999, <http://www.prweb.com/releases/1999/12/prweb10953.php>
8. Scripts for Educators. © 1996, Kristina L. Pfaff-Harris, <http://www.tesol.net/scripts/RemindMe/>

EXAMINER

DATE CONSIDERED

EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

Notice of References Cited

Application/Control No.

09/749,078

Applicant(s)/Patent Under
Reexamination
GEARY, STUART LLOYD

Examiner

Romain Jeanty

Art Unit

3623

Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
	A	US-6,101,481	08-2000	Miller, Neil G.	705/9
	B	US-6,445,968	09-2002	Jalla, Maharaj K.	700/101
	C	US-6,678,714	01-2004	Olapurath et al.	718/104
	D	US-			
	E	US-			
	F	US-			
	G	US-			
	H	US-			
	I	US-			
	J	US-			
	K	US-			
	L	US-			
	M	US-			

FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	Classification
	N					
	O					
	P					
	Q					
	R					
	S					
	T					

NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
	U	Alwang "(Instant groupware. (seven 'teamware' packages (include related articles on the editors' choice, suitability to task, the best and worst features of the packages, the groupware components of Microsoft and Netscape Web browsers". Dialog file 47
	V	
	W	
	X	

*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

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05063925 SUPPLIER NUMBER: 20165706 (THIS IS THE FULL TEXT)
Instant groupware. (seven 'teamware' packages) (includes related articles on the editors' choice, suitability to task, the best and worst features of the packages, the groupware components of Microsoft and Netscape Web browsers, chat software for business, and document management software) (Software Review) (Evaluation)
Alwang, Greg
PC Magazine, v17, n3, p175(11)
Feb 10, 1998
DOCUMENT TYPE: Evaluation ISSN: 0888-8507 LANGUAGE: English
RECORD TYPE: Fulltext; Abstract
WORD COUNT: 7278 LINE COUNT: 00587

ABSTRACT: Teamware applications are Web-enabled collaboration software packages with many groupware features but at lower costs and without requiring IS support. They usually offer a central repository for project documentation and a medium for communication via a browser. Most of the seven such products evaluated here provide hosted services under which the vendor manages the server-side applications for prices ranging from a one-time charge of \$50 to monthly per-user fees of \$5 to \$25. The editors' choice is HotOffice Virtual Office Service, which offers a central location for storing documents that can be browsed by author, department, date and project. HotOffice includes reminder and phone-message utilities, links to search engines and Web sites for businesses, and an e-mail client, making it suitable as a replacement for a small-office LAN.

TEXT:

Need a quick way to connect scattered team members? These seven teamware products provide many of the best features of enterprise groupware--without the IS hassles or expense

No man is an island, especially in the world of business. We've come to rely on a variety of electronic methods that help get the job done, including e-mail messaging, threaded discussions, and document sharing. To collaborate electronically, larger organizations install enterprise groupware applications such as Lotus Notes and Microsoft Exchange; smaller outfits, which don't have IS support, rely on Internet e-mail to share documents (and hope their Word attachments will arrive intact). As a smaller business grows, groupware looms as a necessity for doing business, requiring a dedicated server and a full-time support professional to maintain the system.

Teamware Steps Forward

Enter today's budding crop of teamware applications. Often called virtual-office products, these Web-enabled collaboration packages offer many of the features of traditional groupware--minus the investment and need for IS support. Most provide a central meeting place on the Internet where all of a project's communications and documents can reside. When you type in the dedicated URL from a browser, you're presented with a Web page that serves as your team's common workspace.

From there, you can perform a number of tasks, depending on the product you're using. You can review the team's mission statement, check deadlines and instructions posted by the team leader, leave e-mail for other members, initiate or join a discussion or real-time conference, and post documents.

The benefits of teamware abound in terms of ease of use, cost, and performance. Most products require little time to set up (ranging from a few minutes to an hour). The prices of "hosted" versions, in which the vendor handles the server-side applications, range from a one-time \$50 charge to a \$5 to \$25 monthly fee per user. The products require no IS

support: One team member can perform the administrative duties, or the members can share the tasks. And they're fast enough to be usable even at 28.8 Kbps.

Most of the products in our roundup provide hosted services. We also tested a client/server package targeted at the corporate intranet, Instinctive Technology's eRoom. A second such product, Thuridion's CREW, was not available for inclusion in our roundup.

Different Strokes

Each vendor answers the question "What is teamware?" a little differently. Products like Changepoint Corp.'s *involv.net*, Lotus Instant!Teamroom, and Netscape Virtual Office focus heavily on threaded discussion features, whereas most others provide adequate but limited discussion boards without threading. HotOffice Virtual Office Service and Netscape Virtual Office by Concentric provide each user with an e-mail account. Other packages let you communicate via e-mail only with team members within the program, or expect you to use your own e-mail package (which can be a blessing if you'd like to avoid another mailbox.) Only Internet Media's 3-2-1 Intranet! provides calendaring and scheduling, and eRoom and 3-2-1 Intranet! each provide a useful voting utility.

Several of the products provide limited real-time features. HotOffice and Netopia Virtual Office provide text chat and a link to Microsoft NetMeeting, and 3-2-1 Intranet! provides a link to Mirabilis' ICQ, a real-time communications program. (For a look at the real-time collaboration features you'll find in your browser, see the sidebar "Real-Time Tools Under Your Nose." And for a rundown of real-time communications utilities, see the sidebar "Chat for the Workplace.")

The products also differ in implementing document management. eRoom, HotOffice, and Netopia Virtual Office provide robust capabilities, such as drag-and-drop file transfer from the desktop to the office space, integration into Microsoft Office applications, and document versioning. With 3-2-1 Intranet! you must use a third-party FTP utility for file sharing; the other products can perform document sharing only via embedded file attachments in messages. (For a look at two products that focus on document management, see the sidebar "Dealing with Documents.")

Two products--Netopia VO and 3-2-1 Intranet!--reflect unique visions of what teamware should be, focusing on features such as remote control and database collaboration. But Netopia VO omits threaded discussion, and 3-2-1 Intranet! is weak on document management, potentially limiting the products' appeal.

The package that provides the most well-rounded feature set is HotOffice, our Editors' Choice. Its tool set is tightly integrated and offers Web-based e-mail, threaded discussion capability, and real-time chat. For small workgroups considering network connections for file sharing, Hot Office may be a suitable replacement. It also provides links to stock quotes, search sites, and Internet yellow pages, and other links will be added soon.

Building An Office

Picking a package with the best set of features is only part of the challenge. You'll also want to consider how easy a product is to set up and use, how well its parts work together, and whether it's customizable.

For the most part, these products are easy to set up, administrate, and use right out of the box. Simply obtain your URL, user name, and password from the vendor and log on to the site. (Instant!Teamroom and *involv.net* will even send notification messages to your team, complete with log-on information.) In addition, you can designate any team member the administrator, and the products make easy work of adding users and defining access rights.

The price for this level of ease is the use of canned templates: The products provide little or no control over the look of the workspace. HotOffice lets you rearrange a few icons, and other packages let you add a company logo or plain-text welcome message. The notable exception is

Netscape VO. Because it uses Netscape's Web server, discussion server, and e-mail server, setup requires some know-how; but if you envision building a custom Web page for your team, look no further.

Safety Net

If you need to communicate with outside team members but don't want to grant access to your corporate LAN, a teamware product makes sense. But if security is a prime concern, you might want to bypass Netscape VO, which makes its servers available directly on the Internet with no authentication. Consider 3-2-1 Intranet! if it suits your needs; you can configure it to run over Secure Sockets Layer (SSL).

The products that incorporate Java or ActiveX components into their architectures --eRoom, HotOffice, and Netopia Virtual Office--won't work through a firewall right away. But their vendors offer straightforward reconfiguration methods, so you can enable the features you need.

Our Contributors: GREG ALWANG and LES FREED are contributing editors of PC Magazine. ROBERT P. LIPSCHUTZ is the director of the Technology Center for Silicon Valley Internet Partners. KRISTINA DENIKE was the project leader, and TONI F. KISTNER was the associate editor in charge of this story.

Tools for the Team

Most teamware products are easy to set up and use. Feature sets, though, range considerably. Here's the scoop on which products have the tools you need.

Voting

An excellent companion to discussion, a voting feature can be invaluable when discussions bog down.

Only eRoom and 3-2-1 Intranet! offer this feature.

Calendaring and scheduling

If your team needs robust calendaring and scheduling, you'll need to get it elsewhere. Only 3-2-1 Intranet! includes this feature, but it's cumbersome to use. HotOffice Virtual Office Service and Netscape Virtual Office by Concentric promise it in upcoming versions.

Customizable interface

Netscape VO is the only product that gives you complete control over a site's appearance. HotOffice lets users and administrators rearrange icons, but most other products let you add only a company logo or a plain-text message to the main page.

Discussion

Discussion, emerging as the

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05063925 SUPPLIER NUMBER: 20165706 (THIS IS THE FULL TEXT)
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Picking a package with the best set of features is only part of the challenge. You'll also want to consider how easy a product is to set up and use, how well its parts work together, and whether it's customizable.

For the most part, these products are easy to set up, administrate, and use right out of the box. Simply obtain your URL, user name, and password from the vendor and log on to the site. (Instant!Teamroom and *involv.net* will even send notification messages to your team, complete with log-on information.) In addition, you can designate any team member the administrator, and the products make easy work of adding users and defining access rights.

The price for this level of ease is the use of canned templates: The products provide little or no control over the look of the workspace. HotOffice lets you rearrange a few icons, and other packages let you add a company logo or plain-text welcome message. The notable exception is

Netscape VO. Because it uses Netscape's Web server, discussion server, and e-mail server, setup requires some know-how; but if you envision building a custom Web page for your team, look no further.

Safety Net

If you need to communicate with outside team members but don't want to grant access to your corporate LAN, a teamware product makes sense. But if security is a prime concern, you might want to bypass Netscape VO, which makes its servers available directly on the Internet with no authentication. Consider 3-2-1 Intranet! if it suits your needs; you can configure it to run over Secure Sockets Layer (SSL).

The products that incorporate Java or ActiveX components into their architectures --eRoom, HotOffice, and Netopia Virtual Office--won't work through a firewall right away. But their vendors offer straightforward reconfiguration methods, so you can enable the features you need.

Our Contributors: GREG ALWANG and LES FREED are contributing editors of PC Magazine. ROBERT P. LIPSCHUTZ is the director of the Technology Center for Silicon Valley Internet Partners. KRISTINA DENIKE was the project leader, and TONI F. KISTNER was the associate editor in charge of this story.

Tools for the Team

Most teamware products are easy to set up and use. Feature sets, though, range considerably. Here's the scoop on which products have the tools you need.

Voting

An excellent companion to discussion, a voting feature can be invaluable when discussions bog down.

Only eRoom and 3-2-1 Intranet! offer this feature.

Calendaring and scheduling

If your team needs robust calendaring and scheduling, you'll need to get it elsewhere. Only 3-2-1 Intranet! includes this feature, but it's cumbersome to use. HotOffice Virtual Office Service and Netscape Virtual Office by Concentric promise it in upcoming versions.

Customizable interface

Netscape VO is the only product that gives you complete control over a site's appearance. HotOffice lets users and administrators rearrange icons, but most other products let you add only a company logo or a plain-text message to the main page.

Discussion

Discussion, emerging as the cornerstone of teamware, is an excellent way for teams to capture debates and facilitate brainstorming. The Lotus-based products have the strongest features and sophisticated threading capability. Except Netopia VO, each of the products includes an adequate discussion tool.

Real-time conferencing

Real-time features add another dimension to collaboration, giving team members a quick way to connect. HotOffice and Netopia VO include text-based chat with links to NetMeeting for whiteboarding, videoconferencing, and document sharing, while 3-2-1 Intranet! includes a link to ICQ. Unique to Netopia VO are real-time features including audio conferencing and a remote-control facility. @gl heads:

E-mail

Only HotOffice and Netscape VO provide Internet e-mail addresses for every user, while HotOffice also includes a built-in e-mail client. Netopia VO and 3-2-1 Intranet! provide messaging capabilities between team members within the program. All the other programs offer some level of integration with existing e-mail accounts, from simple notifications to full send/receive capabilities. This approach can be a plus if you don't want to have to check yet another e-mail box.

Document management

In case you need to manage multiple documents as part of your project, several products provide specific tools for the task. eRoom, HotOffice, and

Netopia VO provide outstanding capability; each lets you post documents in folders and subfolders, and each offers simple uploads and downloads. eRoom even lets you track document versions. 3-2-1 Intranet! requires that you download a third-party FTP application for file transfers. All the other products are limited to sharing files as attachments.

Related article: Editors' Choice

HotOffice Virtual Office Service

Although the field of teamware products shows promise, we believe the products's spotty feature sets and disparate philosophies will make it difficult for users to figure out which product best suits their team's needs.

The notable exception is HotOffice Virtual Office Service. HotOffice's feature set is rich, well balanced, and intelligently geared toward small businesses.

We find centralized document management a key element to productive team collaboration. The trouble is that most products omit that feature, relying instead on posting documents and embedding attached files within threaded discussion messages. HotOffice provides a central location to store all your relevant documents, browsable by author, department, date, and project. Users can publish documents to HotOffice by dragging files from the desktop or by clicking a toolbar icon within Microsoft Office applications.

Unique features include a reminder utility and phone-message utility, as well as links to search engines, shipping companies, stock tickers, and more. The combination of an e-mail client and document management capability even make HotOffice a suitable LAN replacement for small groups.

Though every product can boast at least one or two unique and innovative features, a combination of threaded discussion and centralized document management is the most effective. Aside from HotOffice, only eRoom, a client/server product, includes both capabilities, though its discussions are not threaded..

Instinctive Technology Inc.: eRoom 1.0

The sole client/server product in our roundup is eRoom 1.0 (\$645 list for five users). Designed as a corporate intranet or extranet solution, eRoom provides powerful document management that includes versioning and integration into desktop applications. But if you need built-in e-mail or real-time collaboration, HotOffice or Netopia VO will be a better fit.

Installation and setup are straightforward. Note that because the browser-based client application is an ActiveX plug-in, using the product from a browser other than Microsoft Internet Explorer requires installing Ncompass, an included plug-in.

The administration capabilities are streamlined and powerful. The server's tab-based user interface makes adding users easy, although you'll want to add users from a browser, since doing so from the server requires shutting down eRoom. And the administrator has granular control over access to rooms and documents, with the ability to grant many levels of access rights.

The eRoom interface is built on a robust and easy-to-use document management system. Each eRoom can store documents on the top level or within folders, and folders can be nested. Groups and folders are displayed neatly as icons, and folders called version organizers keep records of documents as they're altered.

You can create a document as a proprietary eRoom "note" viewable via either a browser or desktop application. To publish it, simply drag the note from the desktop into an eRoom or a folder therein. To download a file, simply drag it from eRoom to the client desktop. In contrast, eRoom's discussion features are limited: Messages are displayed as a string of unthreaded comments. A table of contents and a search utility offset this limitation somewhat, as does the ability to format messages using color and boldface and to include hyperlinks.

For times when disagreement bogs down discussions, eRoom includes an

excellent voting utility. Ballots can be drawn up from within discussion groups or from anywhere else in eRoom. With the click of a button, any discussion participant can post a ballot with a list of response choices and a place for write-in responses.

The package does not include any e-mail or real-time collaboration tools. In the realm of teamware, this is a significant omission, but the power of eRoom's document management may persuade some users to rely on their own applications for those features.

eRoom 1.0. List price: For five users, \$645. Client requires: Microsoft Windows 95 or Windows NT 4.x (Service Pack 2 or later), 16MB RAM. Server requires: Windows NT 4.x (Service Pack 2 or later), 32MB RAM. Instinctive Technology Inc., Cambridge, MA; 617-497-6300; fax, 617-497-5055; www.instinctive.com. Choose 500 at www.pcmag.com/infolink.

eRoom offers an excellent user-interface metaphor for document sharing: files organized into rooms.

Changepoint Corp.: involv.net

If you split a groupware package four ways and put For Rent signs on each, you'd have a vision of involv.net. Changepoint Corp. lets you rent one or more of four collaborative Web applications--Group Discussion, Project Collaboration, Resource Locator, and Software Manager--for as little as \$5 per user per month. involv.net combines some of the best that Lotus Notes has to offer, including excellent discussion databases, multiple views of your data, and powerful search capabilities, at an economical price.

As with most of the hosted solutions, setup is straightforward. When you rent an application, you receive an e-mail confirmation indicating your administrator user name, password, and the URL for your site. You can't alter the site's appearance other than to add a logo to the home page or navigation frame, but the interface is easy to use and quick to load.

Administration is simple for single applications but unnecessarily complex for more than one. The administrator defines who can access the application, but if you're using multiple applications, there is no way to import user profiles between applications. Though this is a huge headache, most small workgroups will need to rent only one application. Team members can be designated managers (who can add members and delete documents), or clients (who can only post discussion documents). Each new member automatically receives an e-mail invitation that includes the workgroup URL, a user name, and a password.

The Group Discussion application (\$10 per user per month) supports discussion threads, file attachments, and views by date, topic, category, or author, but it doesn't include e-mail capability. The hierarchical views are easily expanded or collapsed, giving you the feel of a Lotus Notes client. A nifty group e-mail button lets your existing mail client address a message to all or selected team members.

Project Collaboration (\$25 per user per month) is the most comprehensive offering, with the power to track all aspects of a project. In addition to discussion, it supports task assignments, due dates, hourly estimates, task status, and Web links. As you assign project tasks to team members, the application notifies them via e-mail. Attaching files to discussion documents is easy, as is detaching them, but that's the limit of the application's document management features.

More specialized modules include the Resource Locator (\$5 per user per month), which provides a virtual in/out board for tracking team members, and the Software Manager (\$750 per workgroup per month), which tracks product revisions and bugs.

Larger workgroups looking for a more comprehensive client/server solution might consider involv.net's big brother, [involv Intranet](http://involv.net). Not finished in time for testing but available at press time, [involv Intranet](http://involv.net) requires a dedicated Domino server (\$5,000 plus \$40 to \$90 per user). It includes all the features of involv.net as well as contact management, event planning, advanced document management, issue management, real-time

chat, and sales processing. The interface is one of the best HTML implementations we've seen, incorporating tabbed pages in an easy-to-navigate and comprehensive fashion.

involv.net. List price: \$10, \$25, and \$5 per user per month for Group Discussion, Project Collaboration, and Resource Locator, respectively; \$750 per workgroup per month for Software Manager. System requirements: Netscape Navigator 3.0 or higher or Microsoft Internet Explorer 3.01 or higher. ChangePoint Corp., Richmond Hill, ON, 800-263-7189, 905-886-7700; fax, 905-886-7023; www.involv.net. Choose 502 at www.pcmag.com/infolink.

involv.net has a group e-mail option for sending e-mail to all members of your workgroup.

HotOffice Technologies Inc.: HotOffice Virtual Office Service

More than any other product in this roundup, HotOffice Virtual Office Service (list price \$8 to \$19 monthly per user) comes close to setting a standard for teamware; as a result, it earns our Editors' Choice. An extremely well-balanced feature set includes a Web-based e-mail client, threaded discussion, document posting, and desktop integration. The package also includes features such as reminders, phone messages, and real-time conferencing. Near-seamless integration and a friendly interface round out the product. (We tested the public beta version; HotOffice should ship by the time you read this.)

Setup and administration are simple. The administrator can add and delete users and set access rights by departments and projects. The user interface, My Desk, is somewhat customizable; the administrator can organize the top half, and users can arrange the bottom. HotOffice also has a useful, context-sensitive help utility.

Unlike any other teamware product, HotOffice has customizable icons that provide links to search sites, to sites of shipping companies such as Federal Express and UPS, and to Quote.com for stock quotes. HotOffice may have additional links by the time you read this.

For users without e-mail accounts, HotOffice includes a well-implemented e-mail client with a simple address book. Folders make it easy to organize messages, and messages can include links and attachments. A reminder utility lets you send e-mail messages at preset intervals, and another utility lets the person who answers your phone forward a message to your HotOffice e-mail account.

The discussion features are flexible but too permissive. Users can create new topics, and threading shows the flow of messages. You can make discussions available to specific departments or for individual projects, and you can restrict user access. But in testing, we found that HotOffice let anyone with access rights delete any message. We expect the problem to be fixed by the time you read this.

The real-time collaboration tools include a simple text-based chat feature with multiple rooms. There's a link to Microsoft NetMeeting for whiteboarding, application sharing, and videoconferencing.

HotOffice's document management is by far the best among the hosted products in this roundup and rivals that of eRoom. With its e-mail client, HotOffice can replace LANs for very small workgroups.

Documents are posted in folders on the site, browsable by author, department, date, and project. To publish documents from Microsoft Office 95 and 97 applications, you must install the HotOffice Starter Kit; it adds a publishing wizard to the desktop and a publishing icon to each Office application's File menu. To publish a file created in another application, simply drag the file to the HotOffice Publisher icon on the desktop. The wizard works smoothly, but posting documents is sometimes quite slow. Controls let you make the published document available to all team members or to a select number.

HotOffice Virtual Office Service. List price: \$8 to \$19 per user per month. Requires: Microsoft Internet Explorer 3.02 or later or Netscape Navigator 3.01 or later. HotOffice Technologies Inc., Boca Raton, FL; 561-995-0005; fax, 561-995-5990; www.hotoffice.com. Choose 501 at

www.pcmag.com/infolink.

HotOffice Virtual Office Service's publishing wizard handles document sharing cleanly and efficiently.

Related article: Thumbs Up! Thumbs Down!

Thumbs Down!

Multiple Passwords One password won't give you access to all the user features of 3-2-1 Intranet!. You need separate passwords to belong to more than one workgroup or to use the third-party FTP program you'll need for file transfers.

Thumbs Up!

Drag-and-Drop File Transfer eRoom's virtual rooms become an extension of your desktop. You can drag and drop files into or out of your browser window as easily as you would any other folder on your system.

Desktop Application Integration HotOffice installs a flame button to all Microsoft Office applications that lets you publish files to your virtual office with the push of a button.

Related article: Real-Time Tools Under Your Nose

Thinking about trying a real-time collaboration tool? You may need to look no further than your browser. Both Microsoft Internet Explorer 4.0 and Netscape Communicator 4.0 bundle products that provide whiteboard, chat, and file-transfer features. Microsoft NetMeeting 2.1 also includes videoconferencing capability and application sharing, while Netscape Conference 4.0 adds collaborative browsing to the mix.

NetMeeting runs on Microsoft Windows 95 or Windows NT 4.0 independent of IE4--which means that you can also run it using Navigator. Six collaboration applications--videoconferencing, application sharing, whiteboard, file transfer, chat, and Internet phone--provide multiple ways to get your point across.

The application-sharing and collaboration tools let users share and collaborate on documents and work jointly within an application. You can guide someone through a Web site by sharing a browser application, for instance, or explain a financial spreadsheet to a colleague. There's one-on-one videoconferencing, and a whiteboard tool lets you collaborate freehand on a shared work surface.

Despite the variety of features, the effectiveness of NetMeeting depends on available bandwidth. Although we found the application-sharing and videoconferencing applications to be excellent productivity tools, both require at least an ISDN connection to be truly useful. We found the chat, file-transfer, and Internet-phone functions impractical at modem speeds. And one caveat: The videoconferencing and Internet-phone features use UDP streams that may be blocked by your company's firewall. A NetMeeting Resource Kit and SDK is also available free for building your own collaboration solutions.

Conference is the new version of the Netscape product formerly known as CoolTalk, which was bundled with Netscape Navigator 3.0. Although its feature set lacks the richness of NetMeeting's--there's no videoconferencing or application sharing--because it's part of Communicator, your colleagues are already set up to use it if they have Navigator.

Conference includes whiteboarding, collaborative browsing--so you can walk someone through a Web site (but not an application)--file transfer, and a simple chat program. Its Internet-phone capabilities require a sound card on each end of the connection. Sound quality, however, was mediocre. We found collaborative browsing to be Conference's most useful tool.

There are several standalone products on the market with similar features. For other options, you may want to explore products from VocalTec (www.vocaltec.com), VDOnet (www.vdonet.com), Connectix (www.connectix.com), and Intel (www.intel.com).

Microsoft NetMeeting 2.1. Free. Microsoft Corp., Redmond, WA; 800-426-9400, 425-882-8080; fax, 425-936-7329; www.microsoft.com. Choose 507 at www.pcmag.com/infolink.

Netscape Conference 4.0. Free. Netscape Communications Corp., Mountain View, CA; 800-638-7483, 650-254-1900; fax, 650-528-4124; www.netscape.com. Choose 508 at www.pcmag.com/infolink.

Lotus Development Corp.: Lotus Instant!Teamroom

Lotus Instant!Teamroom (list price \$14.95 monthly per user) is the first in a series of Lotus Domino-based rentable applications available on the Web. Although it doesn't offer e-mail and real-time collaboration, the product is easy to set up and use, and it has powerful tools for threaded discussion and document management.

Lotus's approach to providing a teamware product is unique. Rather than selling Instant!Teamroom directly, it offers subscriptions through its "Alliance Partners"--ISPs that offer public servers for Lotus Notes. At press time, Instant!Teamroom was available from Interliant, Netcom On-Line Communications, and US West.

Setup was among the easiest in this roundup. To create an account, we simply connected to www.lotus.com, selected a service provider, and entered the payment information. The account initiator is designated as the team administrator. (Any user can be designated as an administrator, and any administrator can add users.) That person enters users' names and e-mail addresses into a form, and the Instant!Teamroom server automatically sends each user an e-mail containing the server's URL, the user name, and a password.

Administrators can place short, plain-text messages on the "welcome" page, but no graphics or logos. To enter the site, users must click an icon on the welcome page, so it's an ideal place to post global messages. Unfortunately, there's no easy way to format such messages in boldface or color so that they stand out against the existing text; as a result, they're easy to miss.

Because of the use of Lotus Notes, Teamroom's threaded discussion capabilities are of unmatched depth and sophistication. You can view a list of discussions or a message thread on one topic, or you can sort by topic, subject category, date, document type, or author. To view all the messages for a topic, you simply select the top-level message and click the expand icon. A handy feature lets users or administrators attach deadlines to discussions as incentives to keep them moving.

Instant!Teamroom's threaded discussion area serves as the document manager. You can choose a type for each document (action, discussion, reference, or tech brief), or you can create your own classifications. But although the use of document types is helpful, the classifications look alike on-screen. We'd like to see an ability to attach icons or to color-code each type, so the user can better distinguish them.

Performance was only fair. Instant!Teamroom's Java-based client was one of the slower programs to load, and it occasionally crashed our browser.

Lotus Instant!Teamroom. List price: \$14.95 per user per month. Requires: Microsoft Internet Explorer 4.x or Netscape Navigator 3.x. Lotus Development Corp., Cambridge, MA; 800-575-6887, 617-577-8500; www.lotus.com. Choose 503 at www.pcmag.com/infolink.

Lotus Instant!Teamroom's strong suit is its threaded discussion database. Icons on the left side give you an item's status without your having to open it.

Netopia Inc.: Netopia Virtual Office 2.0

Targeted at small, dispersed corporate workgroups, Netopia Virtual Office (\$49.95 as a download, \$69.95 for a shrinkwrapped version) is a bargain. If you're lured by an easy-to-use package that includes remote-access features, limited messaging, real-time collaboration, and excellent file-sharing capabilities, you've found your teamware--but only if you can forgo a discussion feature.

Netopia VO's approach to teamware is unique: Each Virtual Office has one owner and multiple (unlimited) visitors. After a 5MB download for the owner programs, setup takes only five minutes. Visitors can download all

client plug-in components at once (3.5MB), or opt to download each as needed.

Upon accessing a Virtual Office, you're confronted with the conference room Office Door. You can "knock" and request an online conference. If the owner is not online, you can upload to the in-box, peruse the public out-boxes, and leave a message that pops up when the owner next logs on. If you don't have a dedicated Internet connection, you can set Netopia VO to connect to the site and check for messages at predefined intervals.

Netopia VO is the only product to feature remote-control functions borrowed from Netopia's popular product Timbuktu. Look lets a visitor view an owner's screen--ideal for training and hands-off collaboration. Control gives you remote control over the owner's PC. Aside from collaboration, Control is an ideal solution for mobile workers who need to access information frequently or run applications from an office PC.

Netopia VO lets you send file attachments via e-mail, but only one way--from visitor PCs to the owner PC. It is possible to configure all users as owners to facilitate bilateral messaging, but that's an awkward management solution at best.

Netopia VO's real-time conferencing features are the best we've seen, including a text-based chat feature and an Intercom feature that provides audioconferencing. However, these features work only between the owner and one visitor. Netopia VO also includes a link to NetMeeting 2.1.

Netopia VO's document management features are powerful and easy to use. Outbox, the file transfer applet, floats over the browser window, letting you upload or download files with a mouse click. You can create private folders and subfolders with granular access rights, great for distributed workgroups that lack an FTP site for distributing documents.

We tested a late 2.0 beta; the shipping version should be available by press time. Version 1.1 was severely limited because the owner's PC had to be on in order to access the Virtual Office. In version 2.0, major ISP Geocities hosts the Netopia Virtual Offices, putting them more in line with other hosted products we tested.

Netopia Virtual Office 2.0. List price: Download, \$49.95; boxed version, \$69.95. System requirements: 486DX/33 (486DX/100, sound card, microphone and speakers for the Intercom feature), 8MB RAM, 15MB hard disk space, TCP/IP or PPP connection. Netopia Inc., Alameda, CA; 510-814-5000, fax 510-814-5020; www.netopia.com. Choose 504 at www.pcmag.com/infolink.

Netopia Virtual Office features a powerful Out Basket applet that lets you upload and download files to public or private folders easily.

Related article: Chat for the Workplace

A new breed of real-time communications applications is trying to carve out a corporate niche. Instant messaging applications like Activerse's Ding!, ichat Pager, and ICQ let you predefine a contact list of users (who also need the program) and alert you when those users come online. Once connected, you can send a message, file, or Web pointer or enter a real-time chat room.

Activerse's Ding! 1.0 beta 4 (free for noncommercial use; \$29.95 for businesses) was simple to install. Registering with the Ding! Switchboard added our Ding! address (or WhoDP) to the Four11 and Ding LDAP directory servers for others to find. Ding! runs as a Java application on Microsoft Windows 95, Windows NT, and Solaris, with additional versions in the works. Ding! requires a network reconfiguration to work through a firewall, though. (Activerse Inc., Austin, TX; 800-235-9274, 512-708-1255; fax, 512-708-1293; www.activerse.com. Choose 509 at www.pcmag.com/infolink.)

ichat Pager 1.1. (free) provides a richer feature set that includes scheduled pages and support for both text and audio streams. Registering puts you in ichat's directory service, giving you access to anyone else connected with the service. Pager works on Windows NT, Windows 95, Macintosh, and PowerPC.

Pager sits on the toolbar of your desktop or can be launched at startup; click on the icon to launch a window containing a list of ichat

members. For privacy, you can allow people to view just your name or your name with additional details.

For a more serious implementation, the ichat Paging System also offers servers, firewall proxy, and administration tools so you can run your own Internet or intranet system. (ichat Inc., Austin, TX; 888-242-8669, 512-425-2200; fax, 512-719-8225; www.ichat.com. Choose 510 at www.pcmag.com/infolink.)

Mirabilis's ICQ 1.113 beta (free) is a more robust solution, providing a full set of real-time collaboration tools including the ability to launch multimedia applications. The program can send the usual types of information types, including messages, URLs, and files. Users can also initiate private or multiuser chat sessions. ICQ can also serve as a launch point for other collaboration tools, such as VDonet's VDOPhone or White Pine Software's CU-SeeMe.

In addition, ICQ will cache your messages, files, or URL transmissions until a recipient comes back online. Searching can be done by e-mail address, name, or Universal Internet Number (UIN). For privacy, you can reserve the right to authorize any user wanting to send you messages, or you can choose to ignore specific people. (Mirabilis Ltd., Tel Aviv, Israel; 972-3-6488090; fax, 972-3-6488095; www.mirabilis.com. Choose 511 at www.pcmag.com/infolink.)

ICQ can launch other applications based on messages you send across the wire.

Concentric Network and Netscape Communications Corp.: Netscape Virtual Office by Concentric

In a field marked by easy-to-implement products, Netscape Virtual Office (starting at \$29 for a single user) is the only hosted product aimed at technically savvy users. The Netscape VO package is built on Concentric's web, mail, and NNTP discussion servers. The result is a polished suite of teamware tools strong in messaging and customization but weak in document management and integration. To use Netscape VO to its fullest potential, you'll need lots of time and a fair amount of expertise.

Virtual Office provides plenty of flexibility: The Web server gives you a place to publish "broadcast" information, the discussion server provides a forum for one-to-many interactive discussion and file sharing (via attachments), and the e-mail server provides team members with full-fledged messaging capability. But because the servers are available directly on the Internet, security is of greater concern than with the other hosted products.

Unlike the other hosted products that require just a Web browser and a credit card to get up and running, Netscape VO users need an e-mail client, newsgroup reader, and Web browser--all of which are provided by Netscape Communicator 4.0 (and IE 3.0 and up). This approach means users must switch among Communicator components to take full advantage of Netscape VO's features, though. Also, you need to configure the e-mail and newsgroup software manually for each server, a simple but time-consuming procedure for each group member.

Because the Web page is located on a Web server, we had full control over the look of our site via HTML. Netscape VO's well-designed administration interface makes managing the site easy, letting you add and delete users, manage discussion groups, and control server access. Administrators can inspect and fine-tune virtually every aspect of each server's operation and generate detailed reports on traffic, disk usage, and logging.

The discussion server let us create multiple discussion groups for different aspects of our project. We could set varying degrees of user access to each discussion as well as create private discussions.

Both the discussion and e-mail servers support file attachments, but other than that, Netscape VO has no document management features or central location to store documents. But it has excellent control over formatting discussion and e-mail messages. They can contain a mixture of formatted

text, graphics, and HTML code--a marked improvement over standard Internet e-mail messaging and that of the other products.

Netscape Virtual Office by Concentric. List price: Starts at \$29 per month. Concentric Network, Cupertino, CA; 408-342-2800; fax, 408-342-2810; www.concentric.net. Netscape Communications Corp., Mountain View, CA; www.netscape.com. Choose 505 at www.pcmag.com/infolink.

Netscape Virtual Office by Concentric's user editor lets administrators add, delete, and modify the access rights of individual users.

Internet Media Inc.: 3-2-1 Intranet!

Although 3-2-1 Intranet! (list price \$9.95 per user per month) has many collaboration staples, such as threaded discussion and document management, we found the features poorly implemented compared with those of other products. But unique features such as calendaring and the ability to create collaborative databases and newsletters may make the package tempting for some groups.

Although we found setup and administration relatively easy, group membership options are limited: The administrator can assign a user either to all groups, to a single group, or to a public group (which permits access only to information on a public site). The only way to give a user access to a select number of groups is to assign a separate password for each.

The interface is complex, poorly integrated, and confusing. Rather than providing a central workspace, 3-2-1 Intranet! spreads all applications and data across personal, group, and company workspaces. In each workspace, you can choose from multiple applications--such as bulletin boards, calendars, databases, surveys, newsletters, and file libraries--but they're presented in an unorganized manner.

The package's unique collaborative-database capability is useful for groups that need to share lots of structured information. To set up a database, the administrator simply enters the database fields, then allows access by either a single group or the entire organization. Users can add, search, view, and edit records. Information is entered into HTML forms and displayed in no-frills tables. The tables are appropriate for simple data such as contact lists, inventories, and records of customer calls, but entering long data fields is awkward.

The product also includes a powerful forms generator. Simple HTML form templates let administrators create forms, surveys, and newsletters--an effective way to capture and display user information.

The discussion capability is fairly good. The administrator can create threaded discussions, with hyperlinks, for both specific groups and the whole company. Oddly, the messages we created often extended beyond the text box. (This didn't happen as we viewed messages we received.)

The product's calendaring feature--the only one in this roundup--is marred by a severe lack of integration. Handling personal, workgroup, and companywide events takes three separate calendars, and you can display them only in single-month views. But the calendars' forms-based interfaces makes them easy to modify.

There's no e-mail client, but you can send messages to any other 3-2-1 Intranet! user, create and send alarms, and contact the administrator of a threaded discussion group. (To read the message, the recipient must have a valid e-mail address and client.) The package doesn't include any real-time collaboration features now but should by the time you read this.

File uploading requires a third-party FTP utility, so it is not likely to be an intuitive operation for many users. The administrator can create links to uploaded files, group them for viewing by either some or all groups, and create a public site for posting downloadable files.

3-2-1 Intranet! List price: \$9.95 per user per month. Requires: AOL browser, Microsoft Internet Explorer 3.x, Netscape Navigator 3.x, or Web TV. Internet Media Inc., Dallas; 214-954-0055; fax, 214-954-0059; www.iminet.com. Choose 506 at www.pcmag.com/infolink.

3-2-1 Intranet! offers several utilities, but the standout feature is the unique collaborative databases.

Related article: Dealing With Documents

Teamware products are good multi-purpose collaboration tools, but many users don't need another other communications tool beyond e-mail and the telephone. What they do need is an efficient, universal way to share electronic documents.

Innovative products from Net-It Software and Xerox Document Management Systems enlist the Web's help in managing and distributing documents better by posting them as a collection of Web pages viewed and downloaded via a Java-enabled browser.

Xerox's DocuShare 1.0 (\$695 list for a single server and 25 clients to \$995 for 50 clients) converts documents into HTML files you publish via a Web server. Although DocuShare lacks Net-It's extensive file-conversion capabilities, it provides excellent tools for file organization and annotation. Collections can contain files, URLs, text messages, and calendars. The program has no user interface of its own--all access to files is performed through a browser.

An included search tool makes easy work of locating a specific document or group of documents without navigating through the collection. Each document is tagged with a descriptive name, comment line, author, posting date, and file size. To view a document, simply click on the name. If it is viewable within the Web browser, the document will appear in the browser window; if it requires an external application to launch (as would a spreadsheet), DocuShare downloads the file to the client PC.

DocuShare runs only on Microsoft Windows NT Server 4.0 with Microsoft Internet Information Server (IIS) or on Sun Solaris 2.5. Installation is simple; all files install from the DocuShare CD-ROM in about five minutes. (Xerox Document Management Systems, Palo Alto, CA; 800-428-2995, 650-424-0111; www.xerox.com/products/docushare. Choose 512 at www.pcmag.com/infolink.)

Net-It Central 1.0 (\$1,995 list for 100 documents, \$4,995 list for unlimited documents, \$6,995 list for API.) is like a document funnel: Pour document files into one end, and a formatted set of HTML pages that you can publish with any web server emerges from the other. Net-It Central is expressly designed for use inside a corporate firewall, and as such it doesn't provide any user authentication or access control.

Net-It Central uses Net-It Software's proprietary jDoc technology to perform the file conversion. We tested Net-It Central with a wide variety of files; it consistently created an accurate, online-viewable representation of the original document. Downloading the original document (in the original format) to a user's PC takes only a click on an icon.

Net-It Central's only shortcomings are the lack of version control and the lack of a mechanism for users to add comments or annotations to document files--two features we liked best about DocuShare.

Net-It Central requires Microsoft Windows 95 or Windows NT 4.x.

(Net-It Software, San Francisco; 888-638-4844, 415-551-0600; www.net-it.com. Choose 513 at www.pcmag.com/infolink.)

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SPECIAL FEATURES: table; illustration

COMPANY NAMES: HotOffice Technologies Inc.--Products; Changepoint Corp.--

Products; Lotus Development Corp.--Products; Netopia Inc.--Products;

Concentric Network Corp.--Products; Netscape Communications Corp.--

Products; Internet Media Inc.--Products

DESCRIPTORS: Work group computing--Computer programs; Network software--

Evaluation; Internet--Computer programs

PRODUCT/INDUSTRY NAMES: 7372682 (Internet Server Software); 7372630

(Workgroup Software)

SIC CODES: 7372 Prepackaged software

TICKER SYMBOLS: LOTS; NSCP

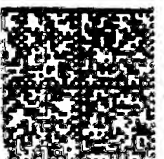
TRADE NAMES: HotOffice Virtual Office Service (Internet/Web server software)--Evaluation; Involv.net (Internet/Web server software)--Evaluation; Lotus Instant!Teamroom (Internet/Web server software)--Evaluation; Netopia Virtual Office 2.0 (Internet/Web server software)--Evaluation; Netscape Virtual Office by Concentric (Internet/Web server software)--Evaluation; 3-2-1 Intranet! (Internet/Web server software)--Evaluation; eRoom (Workgroup software)--Evaluation

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